EPA Comment #32: The SDEIS states that modeled groundwater capture system efficiency at the tailings basin is at least 90%. However, it does not explain the basis for this estimate.

Recommendation: The FEIS should provide the specific model assumptions that were used to make this determination.

EPA Issue 3: A groundwater capture and containment system will be installed at the tailings basin.

Response to EPA Comment #32: The design of the tailings basin capture system includes (1) a slurry wall keyed into bedrock, (2) a collection trench on the tailings side, and (3) permanent pumping of the collection trench to depress the groundwater level on the tailings side. The proposed capture system uses pumping on the tailings side of the slurry wall to reverse hydraulic gradients across the slurry wall and in underlying bedrock inward back toward the tailings basin. The conceptual hydraulics of this type of system predicts that it would achieve complete or nearly complete groundwater capture in the surficial aquifer. See Figure 5.2.2-7.

To more fully assess capture efficiencies, the FEIS relies on revising cross-section models from the SDEIS to evaluate containment systems on the north, northwest, and west sides of the Tailings Basin. The updated modeling relies on data from a 2014 field program that investigated bedrock along the alignment of the proposed capture system on the north, northwest, and west sides of the Tailings Basin. New data were collected on bedrock hydraulic conductivity, RQD, and depth to top of bedrock. Along with the new data, the revised model also considers the presence of an upper more permeable bedrock zone directly below the slurry wall. Sensitivity analyses have included variable bedrock hydraulic conductivity and different upper bedrock zone thicknesses up to ~~15~~ 30 meters.

The cross-section model results predict that the groundwater capture efficiencies of the proposed Tailings Basin capture systems would be substantially greater than 90%. This analysis supports the conclusion that the assumption of 90% or greater capture efficiency of groundwater in the surficial aquifer is justified.